Appendix G
ENGINEERING DESIGN AND COST ESTIMATES

The capacity of each water resources development project for 2020 was estimated (**Table G-1**). The original estimates were developed in the early stages of the Central and Southern Florida (C&SF) Project Comprehensive Review Study (Restudy). The capacities are based on preliminary land suitability analysis used in conjunction with a Geographic Information System (GIS). The analysis included location, land availability, need of the project, and other decisive parameters.

This preliminary analysis and information was assembled as data used in the regional and subregional models. Results regarding sizes, capacities, location, and other parameters were gathered from the models and refined. Other factors such as policies, discussions regarding land acquisition, and other constraints were included in the original estimates.

The capacities of each component are given in acre-feet (ac-ft) and/or million gallons per day (MGD). Surface storage is usually measured in acre-feet to describe an area (acres) filled with water at a certain depth (feet). When a component deals with pumpage, ground water, or Aquifer Storage and Recovery (ASR) the units are presented in MGD to represent a volume of water (million gallons) that are moved in a day.

Table G-1. Capacity of each Water Resources Development Project for 2020.

Component	Project Implementation Report	Real Estate Acquisition	Design	Plans and Specs.	Construction	Total Cost
Lake Okeechobee						
Water Supply and Environmental Schedule						
Lake Okeechobee ASR	$45,705,000	$7,515,001	$22,851,999	$7,617,002	$1,013,623,000	$1,097,312,002.00
Lake Okeechobee Service Area						
North Of Lake Okeechobee Storage Reservoir	$3,921,000	$189,720,001	$1,961,000	$654,001	$88,597,999	$284,854,001
St. Lucie /C-44 Basin Storage Reservoir	$902,000	$90,675,000	$451,000	$150,000	$20,384,000	$112,562,000
Caloosahatchee/ C-43 Basin Storage Reservoir with ASR	$12,926,001	$132,621,000	$6,463,000	$2,154,001	$286,031,000	$440,195,002
L-8 Project.	$23,593,999	$4,290,000	$1,441,000	$480,000	$65,105,000	$94,909,999
Taylor Creek / Nubbin Slough Storage and Treatment Area	$3,064,000	$29,700,000	$1,532,000	$511,000	$69,220,000	$104,027,000
Caloosahatchee Backpumping with Stormwater Treatment Area (STA)	$2,874,000	$13,179,000	$1,437,001	$479,000	$64,926,000	$82,895,001

Table G-1. Capacity of each Water Resources Development Project for 2020. (Continued)

Estuaries						
Environmental Water Supply Deliveries to the Caloosahatchee Estuary						
Environmental Water Supply Deliveries to the St. Lucie Estuary						
St. Lucie River Estuary/ C-23, C-24 Storage Reservoirs	$6,027,000	$223,104,999	$3,012,999	$1,005,001	$136,166,000	$369,315,999
Everglades Agricultural Area						
Everglades Agricultural Area (EAA) Storage Reservoir	$14,432,001		$7,216,000	$2,405,000	$326,059,001	$436,648,002
Revised Holey Land Operation Plan -based on rain-driven operations						
Modified Rotenberger Operation Plan- based on rain-driven operations						
North Palm Beach Service Area						
C-17 Backpumping		$10,367,001	$607,001	$67,000	$9,149,001	$20,190,003
C-51 and Southern L-8 Reservoir		$27,351,000	$6,464,001	$2,155,000	$292,086,001	$328,056,002
Lower East Coast Service Area 1						
Hillsboro Impoundment		$23,587,000	$924,000	$103,000	$13,921,000	$38,535,000
Hillsboro – ASR	$4,197,999		$2,099,001	$700,000	$85,847,000	$92,844,000
C-51 Backpumping to Water Catchment Area		$13,475,000	$1,185,001	$132,000	$17,840,000	$32,632,001
C-51 Regional Groundwater ASR		$9,945,000	$2,522,000	$841,000	$113,983,000	$127,291,000
Palm Beach County Agricultural Reserve Reservoir		$57,657,000	$1,369,000	$456,000	$61,877,000	$121,359,000
Lower East Coast Service Area 2						
Western C-11 Diversion Impoundment and Canal		$82,520,000	$2,616,000	$291,001	$39,410,000	$124,837,001
C-9 STA / Impoundment		$62,939,001	$1,620,000	$180,000	$24,407,001	$89,146,002
Broward County Secondary Canal System	$453,001	$1,919,999	$226,001	$75,000	$10,224,001	$12,898,002
Lower East Coast Service Area 3						
North Lake Belt Storage Area (NLBS)		$154,868,001	$7,855,999	$1,761,002	$335,004,000	$499,489,002
Central Lake Belt Storage Area (CLBS)	$35,043,000	$100,359,000	$8,154,001	$2,718,000	$355,494,001	$501,768,002
C-4 Structures	$76,000	$495,001	$38,001	$13,000	$1,708,000	$2,330,002
Bird Drive Recharge Area		$71,624,999	$3,243,000	$360,001	$48,855,001	$124,083,001

Table G-1. Capacity of each Water Resources Development Project for 2020. (Continued)

L-31N Levee Improvements for Seepage Management	$4,317,000		$1,414,000	$471,000	$63,897,000	$70,099,000
Dade-Broward Levee / Pennsuco Wetlands		$8,676,000	$624,000	$69,000	$9,409,000	$18,778,000
Modification to South Dade Conveyance System in Southern Portion of L-31N and C-111.						
Reroute Miami-Dade County Water Supply Deliveries	$5,202,000	$25,800,000	$1,057,001	$352,001	$47,764,000	$80,175,002
C-111N Spreader Canal	$1,990,000	$45,766,001	$995,000	$332,000	$44,952,001	$94,035,002
South Miami-Dade County Reuse (South District Reclaimed Water Treatment Plant).	$14,827,000	$3,324,000	$7,413,001	$2,471,001	$334,989,001	$363,024,003
West Miami-Dade Reuse	$17,972,000	$3,540,001	$8,986,001	$2,995,000	$403,744,000	$437,237,002
Water Conservation Area 1						
Loxahatchee National Wildlife Refuge Internal Canal Structures	$453,000	$345,001		$50,000	$6,821,000	$7,669,001
Everglades Rain-Driven Operations						
Water Conservation Area 2						
Divert Water Conservation Area (WCA) 2 flows to Northeast Shark River Slough or CLBS		$13,013,000	$1,357,000	$452,001	$61,334,000	$76,156,001
Water Conservation Area 3						
WCA-3A and WCA-3B Levee Seepage Management.		$85,126,000	$313,000	$104,000	$14,164,000	$99,707,000
Additional S-345 Structures			$999,000	$333,001	$45,121,000	$46,453,001
Construction of S-356 A and B Structures and relocation of a portion of L-31N		$94,704,000	$431,001	$144,000	$19,467,000	$114,746,001
Decompartmentalization of WCA-3	$2,440,000	$479,000	$1,765,000	$589,000	$79,786,001	$85,059,001
Flow to Central WCA-3A	$855,000		$427,000	$142,000	$19,315,000	$20,739,000
Flows to Eastern WCA-3B from CLBS.			$141,000	$47,000	$6,356,000	$6,544,000
Pump Station G-404 Modification	$418,000	$209,000	$70,000	$9,441,000	$10,138,000	
Bays						
Biscayne Bay Coastal Wetlands	$3,871,001	$205,655,000	$1,936,001	$645,000	$87,476,001	$299,583,003

Table G-1. Capacity of each Water Resources Development Project for 2020. (Continued)

Acme Basin (OPE)		$8,500,000	$717,000	$80,000	$10,803,000	$20,100,000
Protect wetlands next to WCA-1 (OPE)		$48,972,001	$235,000	$26,000	$3,539,000	$52,772,001
Pal-Mar Corbett Hydropattern (OPE)		$8,000,000	$155,000	$17,000	$2,328,000	$10,500,000
Miccosukee Water Management Plan (OPE)	$937,001	$1,718,000	$469,000	$156,000	$21,179,001	$24,459,002
Lake Okeechobee Tributary Dredging (OPE)	$157,000	$900,000	$78,000	$26,000	$3,539,000	$4,700,001
Lake Worth Restoration Lagoon (OPE)	$82,000	$300,000	$41,000	$14,000	$1,863,000	$2,300,000
Winsburg Farms Wetlands (OPE)	$412,000	$4,140,000	$206,000	$69,000	$9,313,001	$14,140,001
Pineland Hardwood Restoration (OPE)	$82,000	$300,000	$41,000	$14,000	$1,863,000	$2,300,000
Florida Keys						
Florida Keys Tidal Restoration (OPE)	$49,000	$51,000	$25,000	$8,000	$1,118,000	$1,251,000
Systemwide						
Melaleuca and Other Exotic Plants (OPE)			$357,000	$40,000	$5,375,001	$5,772,001